

PATENT CLAIMS

1. A method for maintaining a combined-cycle power station ready for start-up, the combined-cycle power station comprising at least one gas turbo group (1), at least one heat recovery steam generator (7) for flowing exhaust gas from the gas turbo group (1) therethrough and producing steam thereby, and at least one steam turbine (13) which is driven by the steam from the heat recovery steam generator (7), with at least one supplemental firing (44, 44a) and at least one fresh air supply fan (46, 46a) being arranged for the heat recovery steam generator (7), the method comprising the step of operating the supplemental firing (44, 44a) during stand-still periods of the power station, continuously or intermittently, in order to set and/or to maintain predetermined states and media flows in the two-phase circuit, which comprises the heat recovery steam generator (7) and the steam turbine (13).
2. The method as claimed in claim 1, further comprising the step of operating at least one of feed pumps or supply pumps (21, 23, 31, 38) of the two-phase circuit, continuously or intermittently, during stand-still periods of the power station.
3. The method as claimed in claim 1, further comprising the step of maintaining the temperature of the medium which is carried in the two-phase circuit above its freezing point by operating supplemental firing (44, 44a).
4. The method as claimed in claim 1, further comprising the steps of producing steam by operating the supplemental firing; and operating the supplemental firing to produce sufficient steam suitable for operating the sealing steam and sealing vacuum systems of the two-phase circuit.

5. The method as claimed in claim 1, further comprising the step of operating the supplemental firing to maintain boiler parameters, e.g. pressures and temperatures, at a sufficient level to ensure overpressure in the steam systems.

6. The method as claimed in claim 1, further comprising the step of operating the supplemental firing to maintain media contained in the cooling systems for the power station above their freezing point.

7. The method as claimed in claim 1, further comprising the step of operating the supplemental firing to generate a heating fluid flow, e.g. at least one of a hot water flow and a steam flow, and applying said heating fluid flow maintain the temperature of components of the two-phase circuit above a predefined minimum temperature.

8. The method as claimed in claim 7, further comprising the step of controlling the temperature of a live steam port of the steam turbine.

9. The method as claimed in claim 1, further comprising the step of operating the supplemental firing to maintain the temperature of tanks in the two-phase circuit above a predefined minimum temperature.

10. The method as claimed in claim 1, further comprising the step of operating the supplemental firing to generate at least one of a flow of steam or and a flow of heating liquid sufficient for producing a degassed feed water supply.

11. The method as claimed in claim 1, further comprising the step of operating the supplemental

firing to produce a steam flow sufficient for operating an evacuation ejector of a condenser of the two-phase circuit.

- 5 12. The method as claimed in claim 1, further comprising the step of operating the supplemental firing for producing sufficient steam for at least one of steam cooling and steam injection of the gas turbo group.
- 10 13. The method as claimed in claim 1, further comprising the step of preheating a lubricant of at least one of the steam turbine and the gas turbo group by means of the supplemental firing.
- 15 14. The method as claimed in claim 1, further comprising the step of operating the fresh air supply fan for purging the heat recovery steam generator and a chimney, in order to further increase the power station
- 20 startup speed.